

HATCH INCORPORATED

Manufacturing power, control and instrumentation systems

December 2, 1985

DOCKET NO. 99901022/85-01

United States Nuclear
Regulatory Commission
Washington, D.C. 20555

Attn: Vendor Program Branch

Gentlemen:

Reference is made to your letter, Docket Number as above, dated November 13, 1985 pertaining to your inspection of Hatch Incorporated (HI), results of which are recorded on Appendix A to referenced letter.

Hatch Incorporated responses to the nonconformances are listed below:

1. (NRC) Criterion IX of Appendix B to 10 CFR Part 50 states:

"Measures shall be established to assure that special processes, including welding . . . are controlled and accomplished by qualified procedures in accordance with applicable codes, standards, specifications, criteria and other special requirements."

(NRC) Hatch Incorporated (HI) Quality Control Manual, Revision 6, dated March 31, 1978, states in part, "All welding shall be in compliance with American Welding Society (AWS) D-1.1 and ANSI-B31.1."

(NRC) The following were contrary to the above:

- a. (NRC) Weld Procedure Specifications (WPSs) No. 1 and 2 were qualified to AWS D1.1 (which addresses welding of base metals greater than 0.125 inches) to weld 10-14 gauge sheet metal (thickness less than 0.125 inch) instead of AWS D-1.3 which is pertinent to welding base metals less than 0.125 inch thick.

(HI) Hatch Inc. has now qualified welding procedures for base metals less than 0.125 under provisions of AWS D-1.3. Attached as enclosures are procedures 12, 13, 14 and 15 verifying this action.

This action will prevent reoccurrence, and it was completed on November 22, 1985.

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PDR GA999 EMVHATCH
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- b. (NRC) For Gas Metal Arc Welding process, AWS D-1.1 specifies that the maximum thickness permitted to be welded is that which is qualified by the Weld Procedure Specification. Contrary to this specification, WPS's No. 3, 4 and 5 have been approved without specifying the weld thickness.

(HI) Welding procedures 3, 4 and 5 have been revised to reflect maximum weld thickness permitted.

This corrective action will preclude reoccurrence, and it was completed on November 22, 1985.

- c. (NRC) AWS D-1.1 does not recognize welding nuts to sheet metal. Contrary to this, WPS No. 6 has been qualified and approved to weld ASTM A 354 nuts to ASTM A 366 sheet metal.

(HI) WPS No. 6 has been rescinded effective November 27, 1985. A copy of this action is attached as an enclosure. Action taken will preclude reoccurrence, and it was completed on November 27, 1985.

- d. (NRC) One unqualified welder was permitted to perform welding.

(HI) The welder (Pablo Alvarez) who performed unauthorized welding has been qualified using 7018 rod. A copy of his qualification is attached.

All welders files have been screened to insure they are qualified to Hatch Inc. Welders Qualification Procedures, and there will be no reoccurrence. Any new welders will be qualified to Hatch Inc. Welding Procedures prior to being placed on the payroll. Corrective action was completed on August 13, 1985.

2. (NRC) Criterion V of Appendix B to 10CFR50 states:

"Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings of a type appropriate . . . shall include quantitative or qualitative acceptance criteria determining that important activities have been satisfactorily accomplished."

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- a. (NRC) Contrary to the above, Hatch Incorporated (HI) did not establish a procedure to crimp lugs to wires, or define the acceptance criteria for inspecting the crimped connections.

(HI) Procedures (QCP-18) have been completed covering wire stripping, crimping and inspection. A copy of these procedures are attached. This situation will not reoccur and corrective action was completed on November 27, 1985.

- b. (NRC) Contrary to above, HI did not establish a procedure for automatically welding threaded studs to sheet metal to meet the requirements of Part 4, Section F of the AWS D-1.1.

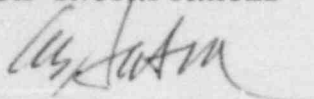
(HI) Attached is a copy of Hatch Inc. Stud Welding Procedures QWP-13-6 which were completed subsequent to your inspection. This action will prevent reoccurrence and corrective action was completed on July 12, 1985.

Hatch Incorporated is also taking action on those items mentioned on inspection report Number 99901022/85-01 even though they were not identified as non-conformances. These corrections will be completed by December 1985.

If you have any questions pertaining to above please feel free to call the undersigned or Ted Taylor at 915/542-1991.

Very truly yours,

HATCH INCORPORATED



A. E. Hatch
AEH:ct
Enc.

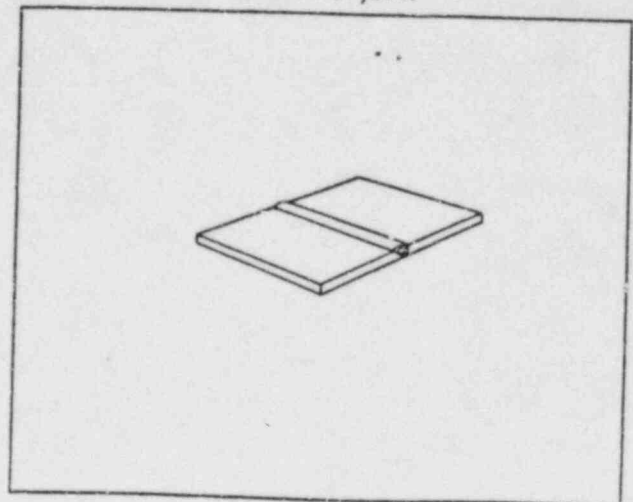
Appendix B: Suggested Form for Sheet Steel Welding Procedure Specification

Company HATCH INCORPORATED

Designation of sheet steel	<u>ASTM 366</u>	Supporting material	<u>ASTM 366</u>
Thickness	<u>0.1196 to 0.0747</u>	Thickness	<u>0.1196 (12 gauge)</u>
Type of coating	<u>CRS</u>	Type of coating	<u>CRS</u>
Welding process	<u>SMAW</u>	Manual, machine, or semiautomatic	<u>MANUAL</u>
Welding current	<u>100 to 150</u>	Type	<u>ELECTRODE-ROD</u>
Melting rate	<u>5 to 10 IPM</u>	Polarity	<u>REVERSE</u>
Wire feed speed	<u>NOT APPLICABLE</u>	Welding position	<u>F, H, V, OH</u>
Arc voltage	<u>24 to 36 VDC</u>	Progression of welding	<u>FOREHAND</u>
Electrode classification	<u>E 7018</u>	Size	<u>1/8 INCH</u>
Shielding gas	<u>NONE</u>	Gas Flow	<u>NOT APPLICABLE</u>
Flux	<u>LOW HYDROGEN</u>	Diameter of arc spot or width of arc seam weld	<u>1/8 INCH</u>
Time for arc spot weld	<u>NOT APPLICABLE</u>	Length of weld	<u>2 INCHES TO CONTINUOUS</u>
Is washer used?	<u>NO</u>		

Type of test	<u>Bend *</u>
Date tested	<u>11/14/85</u>
Test conducted by	<u>O. YGLECIAS</u>
Inspected by	<u>T. TAYLOR</u>
Welder	<u>J. VALENCIA</u>
Social security number	<u>585-07-1542</u>

Sketch of joint



* SQUARE GROOVE BUTT JOINT, SHEET TO SHEET POSITION USED IN TEST

PROCEDURE NO. 12

REVISION 0

AUTHORIZED BY T. Taylor

31 DATE November 22, 1985

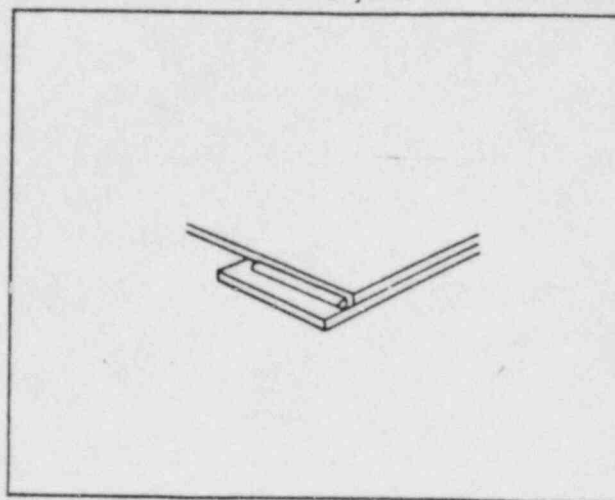
Appendix B: Suggested Form for Sheet Steel Welding Procedure Specification

Company HATCH INCORPORATED

Designation of sheet steel	<u>ASTM 366</u>	Supporting material	<u>A 36</u>
Thickness	<u>0.1196 to 0.0747</u>	Thickness	<u>1/4 INCH</u>
Type of coating	<u>CRS</u>	Type of coating	<u>NONE</u>
Welding process	<u>SMAW</u>	Manual, machine, or semiautomatic	<u>MANUAL</u>
Welding current	<u>100 to 150</u>	Type	<u>ELECTRODE-ROD</u>
Melting rate	<u>5 to 10 IPM</u>	Polarity	<u>REVERSE</u>
Wire feed speed	<u>NOT APPLICABLE</u>	Welding position	<u>F, H, V, OH</u>
Arc voltage	<u>24 to 36 VDC</u>	Progression of welding	<u>FOREHAND</u>
Electrode classification	<u>E 7018</u>	Size	<u>1/8 INCH</u>
Shielding gas	<u>NONE</u>	Gas Flow	<u>NOT APPLICABLE</u>
Flux	<u>LOW HYDROGEN</u>	Diameter of arc spot or width of arc seam weld	<u>1/8 INCH</u>
Time for arc spot weld	<u>NOT APPLICABLE</u>	Length of weld	<u>2 to 4 INCHES</u>
Is washer used?	<u>NO</u>		

Type of test	<u>Bend *</u>
Date tested	<u>11/14/85</u>
Test conducted by	<u>O. YGLECIAS</u>
Inspected by	<u>T. TAYLOR</u>
Welder	<u>J. VALENCIA</u>
Social security number	<u>585-07-1542</u>
Additional: Macroetch	<u>O K</u>
Bend	<u>O K</u>
Visual	<u>EXCELLENT</u>

Sketch of joint



* FILLET WELDED LAP JOINT, SHEET TO SHEET AND SHEET TO SUPPORTING MEMBER POSITION TESTED

PROCEDURE NO. 13

REVISION 0

AUTHORIZED BY T. Taylor

31

DATE

November 23, 1985

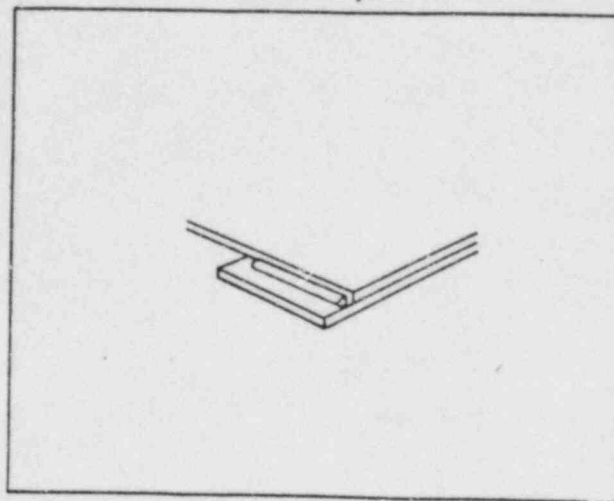
Appendix B: Suggested Form for Sheet Steel Welding Procedure Specification

Company HATCH INCORPORATED

Designation of sheet steel	<u>ASTM 366</u>	Supporting material	<u>A 36</u>
Thickness	<u>0.1996 to 0.0747</u>	Thickness	<u>1/4 INCH</u>
Type of coating	<u>CRS</u>	Type of coating	<u>NONE</u>
Welding process	<u>GMAW</u>	Manual, machine, or semiautomatic	<u>SEMI-AUTO</u>
Welding current	<u>200</u>	Type	<u>WIRE ROLL</u>
Melting rate	<u>NOT APPLICABLE</u>	Polarity	<u>REVERSE</u>
Wire feed speed	<u>4-6 IPM</u>	Welding position	<u>F, H, V, OH</u>
Arc voltage	<u>20</u>	Progression of welding	<u>FOREHAND</u>
Electrode classification	<u>E705-3</u>	Size	<u>.035</u>
Shielding gas	<u>CO2</u>	Gas Flow	<u>35 CFH + 25% -10%</u>
Flux	<u>COPPER COATED</u>	Diameter of arc spot or width of arc seam weld	<u>1/8 INCH</u>
Time for arc spot weld	<u>NOT APPLICABLE</u>	Length of weld	<u>2 to 6 INCHES</u>
Is washer used?	<u>NO</u>		

Type of test	<u>Bend *</u>
Date tested	<u>11/14/85</u>
Test conducted by	<u>O. YGLECIAS</u>
Inspected by	<u>T. TAYLOR</u>
Welder	<u>J. VALENCIA</u>
Social security number	<u>585-07-1542</u>
Additional: Macroetch	<u>O K</u>
Bend	<u>O K</u>
Visual	<u>EXCELLENT</u>

Sketch of joint



*FILLET WELDED LAP JOINT, SHEET TO SHEET AND SHEET TO SUPPORTING MEMBER POSITION TESTED

PROCEDURE NO. 14

REVISION 0

AUTHORIZED BY T. Taylor

DATE November 22, 1985

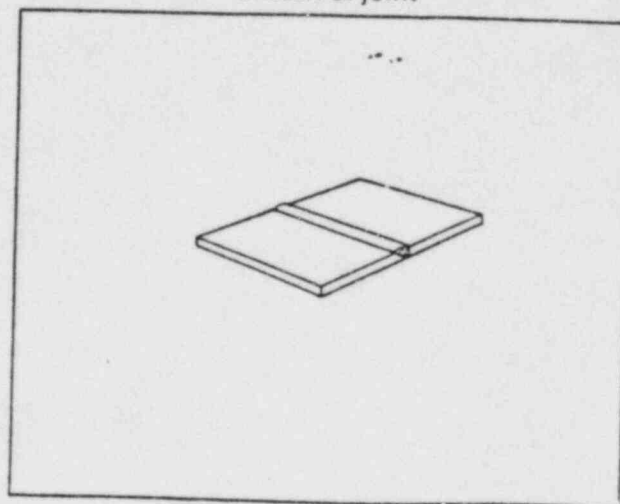
Appendix B: Suggested Form for Sheet Steel Welding Procedure Specification

Company HATCH INCORPORATED

Designation of sheet steel	<u>ASTM 366</u>	Supporting material	<u>ASTM 366</u>
Thickness	<u>0.1196 to 0.0747</u>	Thickness	<u>0.1196 to 0.0747</u>
Type of coating	<u>CRS</u>	Type of coating	<u>CRS</u>
Welding process	<u>GMAW</u>	Manual, machine, or semiautomatic	<u>SEMI-AUTO</u>
Welding current	<u>200</u>	Type	<u>WIRE ROLL</u>
Melting rate	<u>NOT APPLICABLE</u>	Polarity	<u>REVERSE</u>
Wire feed speed	<u>4-6 IPM</u>	Welding position	<u>F, H, V, OH</u>
Arc voltage	<u>20</u>	Progression of welding	<u>FOREHAND</u>
Electrode classification	<u>E 705-3</u>	Size	<u>.035</u>
Shielding gas	<u>CO2</u>	Gas Flow	<u>35 CFH +25% -10%</u>
Flux	<u>COPPER COATED</u>	Diameter of arc spot or width of arc seam weld	<u>1/8 INCH</u>
Time for arc spot weld	<u>NOT APPLICABLE</u>	Length of weld	<u>2-6 INCHES</u>
Is washer used?	<u>NO</u>		

Type of test	<u>Bend *</u>
Date tested	<u>11/14/85</u>
Test conducted by	<u>O. YGLECIAS</u>
Inspected by	<u>T. TAYLOR</u>
Welder	<u>J. VALENCIA</u>
Social security number	<u>585-07-1542</u>
Additional: Macroetch	<u>O K</u>
Bend	<u>O K</u>
Visual	<u>EXCELLENT</u>

Sketch of joint



*SQUARE GROOVE BUTT JOINT, SHEET TO SHEET POSITION USED IN TEST

PROCEDURE NO. 15

AUTHORIZED BY Taylor

REVISION NO. 0

31

DATE November 22, 1985

WELDING PROCEDURE QUALIFICATION TEST RECORD

* PROCEDURE SPECIFICATION

Material specification A36 (GROUP I)
 Welding process GMAW
 Manual or machine SEMI-AUTOMATIC-S
 Position of welding 1 G
 Filler metal specification 5.18
 Filler metal classification E70S-3
 Weld metal grade* NA
 Shielding gas CO₂ Flow rate 35CFH +25% -10%
 Single or multiple pass MULTIPLE
 Single or multiple arc SINGLE
 Welding current DCRP
 Welding progression NA
 Preheat temperature Per Table 4.2 (AWS)
 Postheat treatment NA
 Welder's name Jose Valencia #1

* Applicable when filler metal has no AWS classification.

VISUAL INSPECTION (9.25.1)

Appearance ACCEPTABLE
 Undercut ACCEPTABLE
 Piping porosity ACCEPTABLE
 Base metal thickness qualified 1/8" to 3/8"

GROOVE WELD TEST RESULTS

Reduced-section tension tests Lab #6452-85

Tensile strength, psi

1. 73,690

2. 73,090

Guided-bend tests (2 root-, 2 face-, or 4 side-bend)

Root

Face

1. Acceptable

1. Acceptable

2. Acceptable

2. Acceptable

Radiographic-ultrasonic examination - Acceptable

FILLET WELD TEST RESULTS

Minimum size multiple pass

Maximum size single pass

Macroetch

Macroetch

1. X 3. X

1. X 3. X

2. X

2. X

All-weld-metal tension test

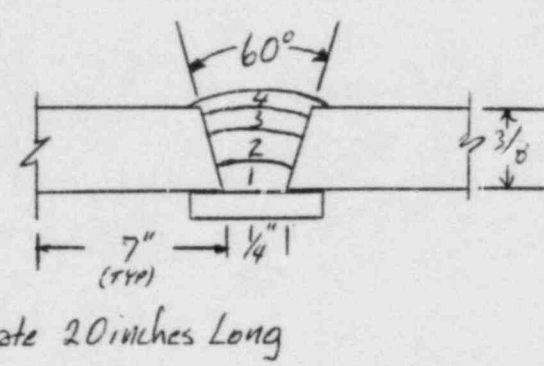
Tensile strength, psi NA

Yield point, psi NA

Elongation in 2 in., % NA

Laboratory test no. NA

WELDING PROCEDURE

Pass No.	Elect. size	Welding current		Speed of travel	Joint detail
		Amperes	Volts		
1	.035	200	20	4.6ipm	 <p>Plate 20 inches Long</p>
2	.035	200	20	4.6ipm	
3	.035	200	20	5 ipm	
4	.035	200	20	2.75ipm	

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of 5B of AWS D1.1, Structural Welding Code. (AWS D1.1-81)

Procedure no. PROC.-3

Manufacturer or contractor HATCH INC.

Revision no. 2 DATE _____

Authorized by [Signature]

Date May 2, 85

Revision 0 DATE 5-2-85

* See GWP-13-3 for additional inf.

WELDING PROCEDURE QUALIFICATION TEST RECORD

* PROCEDURE SPECIFICATION

Material specification A36 (GROUP I)
 Welding process GMAW
 Manual or machine SEMI-AUTOMATIC-S
 Position of welding 1 G
 Filler metal specification 5.18
 Filler metal classification E70S-3
 Weld metal grade* NA
 Shielding gas CO₂ Flow rate 35CFH +25% -10%
 Single or multiple pass SINGLE
 Single or multiple arc MULTIPLE
 Welding current DCRP
 Welding progression NA
 Preheat temperature Per Table 4.2 (AWS)
 Postheat treatment NA
 Welder's name Jose Valencia

*Applicable when filler metal has no AWS classification.

VISUAL INSPECTION (9.25.1)

Appearance ACCEPTABLE
 Undercut ACCEPTABLE
 Piping porosity ACCEPTABLE
 Base metal thickness qualified 1/8"
 Effective throat qualified UP to 3/16"

GROOVE WELD TEST RESULTS

Reduced-section tension tests

Tensile strength, psi

1. NA
 2. NA

Guided-bend tests (2 root-, 2 face-, or 4 side-bend)

Root		Face	
1. <u>NA</u>		1. <u>NA</u>	
2. <u>NA</u>		2. <u>NA</u>	

Radiographic-ultrasonic examination

PARTIAL PEN MACROETCH

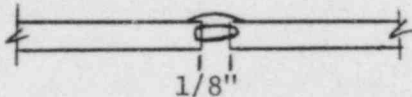
1. OK 3. OK 1. X 3. X
 2. OK 2. X

All-weld-metal tension test

Tensile strength, psi NA
 Yield point, psi NA
 Elongation in 2 in., % NA

Laboratory test no. NA

WELDING PROCEDURE

Pass No.	Elect. size	Welding current		Speed of travel	Joint detail
		Amperes	Volts		
1	.035	200	20	5 ipm	Square Groove 
2	.035	200	20	6 ipm	

Material: 2"x2"x1/4" angle iron 12" Long
 Effective Throat = 3/16 inch min.

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of 5B of AWS D1.1, Structural Welding Code. (AWS D1.1-81)

Procedure no. PROC.-4Manufacturer or contractor HATCH INC.Revision no. 2 DATEAuthorized by [Signature]Date May 2, 85

* See GWP-13-3 for additional inf.

Revision 0 DATE 5-2-85

WELDING PROCEDURE QUALIFICATION TEST RECORD

* PROCEDURE SPECIFICATION

Material specification A36 (Group I)
Welding process GMAW
Manual or machine SEMI-AUTOMATIC-S
Position of welding 2 F
Filler metal specification 5.18
Filler metal classification E70S-3
Weld metal grade* NA
Shielding gas CO₂ Flow rate 35CFH +25% -10%
Single or multiple pass Single & Multiple
Single or multiple arc Single
Welding current DCRP
Welding progression NA
Preheat temperature Per Table 4.2 (AWS)
Postheat treatment NA
Welder's name Jose Valencia

*Applicable when filler metal has no AWS classification.

VISUAL INSPECTION (9.25.1)

Appearance ACCEPTABLE
Undercut ACCEPTABLE
Piping porosity ACCEPTABLE

Base metal thickness qualified 1/4" to 1/2"

GROOVE WELD TEST RESULTS

Reduced-section tension tests

Tensile strength, psi

1. _____
2. _____

Guided-bend tests (2 root-, 2 face-, or 4 side-bend)

	Root	Face
1.	<u>NA</u>	<u>NA</u>
2.	<u>NA</u>	<u>NA</u>

Radiographic-ultrasonic examination

FILLET WELD TEST RESULTS

Minimum size multiple pass	Maximum size single pass
Macroetch	Macroetch

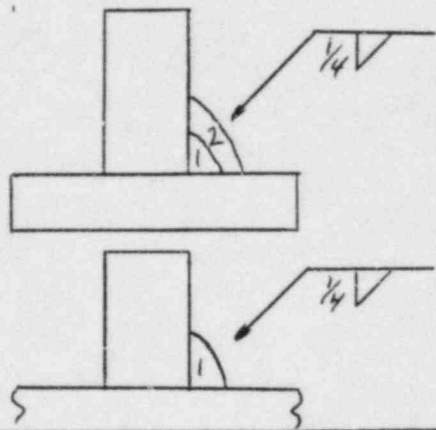
1. <u>OK</u>	3. <u>OK</u>	1. <u>OK</u>	3. <u>OK</u>
2. <u>OK</u>	size <u>1/4 inch</u>	2. <u>OK</u>	size <u>1/4 inch</u>

All-weld-metal tension test

Tensile strength, psi NA
Yield point, psi NA
Elongation in 2 in., % NA

Laboratory test no. NA

WELDING PROCEDURE

Pass No.	Elect. size	Welding current		Speed of travel	TEE Joint detail
		Amperes	Volts		
1	.035	200	20	6 ipm	Plate size: <u>6" X 6" X 12" Long x 1/2" thick</u> 
1	.035	200	20	12 ipm	
2	.035	200	20	5 ipm	

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of 5B of AWS D1.1, Structural Welding Code. (AWS D1-1-81)

Procedure no. PROC-5 Manufacturer or contractor HATCH INC.

Revision no. 2 DATE _____ Authorized by [Signature]

Date May 2 85

Revision 0 DATE 5-2-85

* See GWP-13-3 for additional inf.

WELDING PROCEDURE QUALIFICATION TEST RECORD

#PROCEDURE SPECIFICATION

Material specification A36 to ASTM354
 Welding process GMAW
 Manual or machine SEMI-AUTOMATIC
 Position of welding 2 F
 Filler metal specification 5.18
 Filler metal classification E70S-3
 Weld metal grade* NA
 Shielding gas CO₂ Flow rate 35 GPM +25% -10%
 Single or multiple pass Single
 Single or multiple arc Single
 Welding current DCRP
 Welding progression NA
 Preheat temperature Per Table 4.2 (AWS)
 Postheat treatment NA
 Welder's name Jose Valencia

*Applicable when filler metal has no AWS classification.

VISUAL INSPECTION (9.25.1)

Appearance ACCEPTABLE
 Undercut ACCEPTABLE
 Piping porosity ACCEPTABLE

Base metal thickness qualified 1/8" to unlimited

GROOVE WELD TEST RESULTS

Reduced-section tension tests

Tensile strength, psi

1. NA

2. NA

Guided-bend tests (2 root-, 2 face-, or 4 side-bend)

Root

Face

1. NA

1. NA

2. NA

2. N/a

Radiographic-ultrasonic examination

* NUT MACROETCH CROSS-SECTION

1. OK 3. OK

1. NA 3. NA

2. OK

2. NA

All-weld-metal tension test

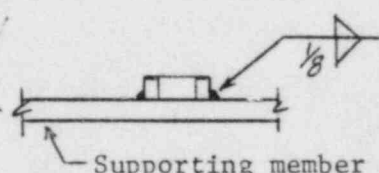
Tensile strength, psi NA

Yield point, psi NA

Elongation in 2 in., % NA

Laboratory test no. NA

WELDING PROCEDURE

Pass No.	Elect. size	Welding current		Speed of travel	Joint detail
		Amperes	Volts		
1	.035	200	20	4.6 ipm	<p>Nut to Supporting Member</p>  <p>Supporting member size: <u>1/4" thick</u> Note: <u>three nuts welded</u></p>

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of 5B of AWS D1.1, Structural Welding Code. (AWS D1.1-81)

Procedure no. PROC.-6

Manufacturer or contractor HATCH INC.

Revision no. 1 DATE MAY 23 1985

Authorized by [Signature]

*NOTE: This test was performed to demonstrate process technique for welding nuts to supporting members.

Date May 2, 85

Revision 0 DATE 5-2-85

See GWP-13-3 for additional inf.

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or welding operator's name PABLO ALVAREZ Identification no. 6
 Welding process GMAW Manual Semiautomatic X Machine
 Position 2 F
 (Flat, horizontal, overhead or vertical - if vertical, state whether upward or downward)
 In accordance with procedure specification no. Proc. - 5
 Material specification A 36
 Diameter and wall thickness (if pipe) - otherwise, joint thickness
 Thickness range this qualifies

FILLER METAL

Specification no. 5.18 Classification E70S-3 F no. 4
 Describe filler metal (if not covered by AWS specification) N/A
 Is backing strip used? No
 Filler metal diameter and trade name .035 Airco Flux for submerged arc or gas for gas metal arc or flux
 cored arc welding CO₂

VISUAL INSPECTION (9.25.1)

Appearance Acceptable Undercut Acceptable Piping porosity None

Guided Bend Test Results

Type	Result	Type	Result
N/A	X	X	X
N/A	X	X	X

Test conducted by N/A Laboratory test no. X
 per AWS D1.1-81

Fillet Test Results

Appearance Acceptable Fillet size 5/16 Inch
 Fracture test root penetration Acceptable Macroetch Acceptable
 (Describe the location, nature, and size of any crack or tearing of the specimen.)
 Test conducted by Cisco L. Guevara Aug 13, 1985 Laboratory test no. N/A
 per AWS D1.1 Figure 5.22.1

RADIOGRAPHIC TEST RESULTS

Film identification	Results	Remarks	Film identification	Results	Remarks
N/A	X	X	X	X	X
N/A	X	X	X	X	X

Test witnessed by N/A Test no. X
 per X

We, the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of 5C or D of AWS D1.1, Structural Welding Code.

Note: Date "Aug 13, 85" on line
 Test Conducted By was added
 November 21, 85

Manufacturer or contractor HATCH INC
 Authorized by [Signature]
 Date Aug 13, 85